MATSUI 1420SIL

MODEL

SERVICE MANUAL

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)
1. MODEL NUMBER and CHASSIS CODE
   You can find it in the back of your unit.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size		14 inch / 335.4mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G/0.18G
		Color System			PAL
		Speaker			1Speaker
			Position		Bottom
			Size		3 Inch
			Impedance		8 ohm
		Sound Output	MAX		1.0 W
			10%(Typical)		0.8 W
		PAL60Hz			Yes
G-2	Tuning System	Broadcasting System			CCIR System B/G
		Tuner and Receive CH	System		1Tuner
			Destination		W/ Hyper
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 ohm
			CH Coverage		E2 - E4, X - Z+2, S1 - S10, E5 - E12, S11 - S41, E21 - E69
		Intermediate Frequency	Picture(FP)		38.90MHz
			Sound(FS)		33.4MHz
			FP-FS		5.5MHz
		Preset CH			80
		Stereo/Dual TV Sound			No
		Tuner Sound Muting			Yes
G-3	Power	Power Source	AC		230V AC 50Hz
			DC		-
		Power Consumption		at AC	
					44 W at AC 230 V 50 Hz
			Stand by (at AC)		10 W at AC 230 V 50 Hz
			Per Year		-- kWh/Year
		Protector	Power Fuse		Yes
G-4	Regulation		Safety		CE
			Radiation		CE
			X-Radiation		PTB
G-5	Temperature		Operation		+5°C ~ +40°C
			Storage		-20°C ~ +60°C
G-6	Operating Humidity				Less then 80% RH
G-7	On Screen Display	Menu			Yes
			Menu Type		Character
			Picture		Yes
				Contrast	Yes
				Brightness	Yes
				Color	Yes
				Tint	No
				Sharpness	Yes
			Audio		No
				Bass	No
				Treble	No
				Balance	No
				BBE On/Off	No
				Stable Sound On/Off	No
			CH Tuning		Yes
				Matual	Yes
				Auto	Yes
				CH Allocation	Yes
			Language		Yes
			Clock Set		No
			On/Off Timer Set		No
			Pin Code Registration		No
			Nicam Auto Off		No
			Colour System		No
			Sound System		No

CONTENTS

SERVICING NOTICES ON CHECKING A1-1
HOW TO ORDER PARTS A1-1
IMPORTANT A1-1
CONTENTS A2-1
GENERAL SPECIFICATIONS ..... A3-1~A3-4
DISASSEMBLY INSTRUCTIONS B-1
SERVICE MODE LIST C-1
CONFIRMATION OF HOURS USED C-1
WHEN REPLACING EEPROM (MEMORY) IC C-2
ELECTRICAL ADJUSTMENTS ..... D1-1~D2-1
MAJOR COMPONENTS LOCATION GUIDE D3-1
BLOCK DIAGRAM E-1, E-2
PRINTED CIRCUIT BOARDS
  MAIN/CRT ..... F-1~F-4
SCHEMATIC DIAGRAMS
  MICON/T.TEXT/TUNER G-1, G-2
  CHROMA/SIF/VIF G-3, G-4
  POWER G-5, G-6
  DEFLECTION/CRT G-7, G-8
  SOUND AMP G-9, G-10
WAVEFORMS H-1, H-2
MECHANICAL EXPLODED VIEW I-1
MECHANICAL REPLACEMENT PARTS LIST J1-1
ELECTRICAL REPLACEMENT PARTS LIST J2-1, J2-2

GENERAL SPECIFICATIONS

		AV2 Output Source		No
		Control Level		Yes
			Volume	Yes
			Brightness	Yes
			Contrast	Yes
			Colour	Yes
			Tint (NTSC Only)	No
			Sharpness	Yes
			Tuning	Yes
			Bass	No
			Treble	No
			Balance	No
			Back Light	No
		Nicam ST		No
		Tone 1/2		No
		Pin Code		No
		AV		Yes
		Skip		Yes
		Channel		Yes
		Hotel Lock		No
		Sleep Timer		Yes
		Sound Mute		Yes
G-8	OSD Language			English French Spanish German Italian
		OSD Language Setting		German
G-9	Clock and Timer	Sleep Timer	Max Time	120 Min
			Step	10 Min
		On/Off Timer	Program(On Tim / Off Tim)	No
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode)	more than	-- Min Sec
G-10	Remote Control	Unit		RC-DG
		Glow in Dark Remocon		No
		Format		NEC
		Custom Code		80-63 h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		31 Keys
		Keys	Power(Stand By)	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0 / AV	Yes
			CH Up	No
			CH Down	No
			Volume Up / +	Yes
			Volume Down / -	Yes
			Quick View	No
			Sleep	Yes
			Info(CH Call)	Yes
			Normal	No
			Menu	Yes
			Enter	Yes
			Mute	Yes
			Fine Tuning +	No
			Fine Tuning -	No
			Tone 1/2	No
		T'TEXT Keys	TEXT / MIX / TV	Yes

GENERAL SPECIFICATIONS

		AV2 Output Source		No
		Control Level		Yes
			Volume	Yes
			Brightness	Yes
			Contrast	Yes
			Colour	Yes
			Tint (NTSC Only)	No
			Sharpness	Yes
			Tuning	Yes
			Bass	No
			Treble	No
			Balance	No
			Back Light	No
		Nicam ST		No
		Tone 1/2		No
		Pin Code		No
		AV		Yes
		Skip		Yes
		Channel		Yes
		Hotel Lock		No
		Sleep Timer		Yes
		Sound Mute		Yes
G-8	OSD Language			English French Spanish German Italian
		OSD Language Setting		German
G-9	Clock and Timer	Sleep Timer	Max Time	120 Min
			Step	10 Min
		On/Off Timer	Program(On Tim / Off Tim)	No
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode) more than		– Min Sec
G-10	Remote Control	Unit		RC-DG
		Glow in Dark Remocon		No
		Format		NEC
		Custom Code		80-63 h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		31 Keys
		Keys	Power(Stand By)	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0 / AV	Yes
			CH Up	No
			CH Down	No
			Volume Up / +	Yes
			Volume Down / -	Yes
			Quick View	No
			Sleep	Yes
			Info(CH Call)	Yes
			Normal	No
			Menu	Yes
			Enter	Yes
			Mute	Yes
			Fine Tuning +	No
			Fine Tuning -	No
			Tone 1/2	No
		T'TEXT Keys	TEXT / MIX / TV	Yes

GENERAL SPECIFICATIONS

		AV Cord (2Pin-1Pin)			No
		Registration Card			No
		PTB Sheet			No
		300 ohm to 75 ohm Antenna Adapter			No
G-13	Interface	Switch	Front	Power	No
				System Select	No
				Main Power SW	Yes
				Sub Power	No
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	No
				Stand-by	Yes
				On Timer	No
		Terminals	Front	Video Input	No
				Audio Input	No
				Other Terminal	Ear Phone
			Rear	Video Input(Rear1)	No
				Video Input(Rear2)	No
				Audio Input(Rear1)	No
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	No
				Euro Scart(21Pin)	Yes (x1)
				Component Input	No
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	Din Type
				AC Outlet	No
G-14	Set Size			Approx. W x D x H (mm)	362 x 360 x 320.5
G-15	Weight			Net (Approx.)	9.5 kg (--- lbs)
				Gross (Approx.)	11.5kg (---lbs)
G-16	Carton	Master Carton			No
				Content	---- Sets
				Material	-- /--
				Dimensions W x D x H(mm)	-- x -- x --
				Description of Origin	No
		Gift Box			Yes
				Material	Double/White
				Dimensions W x D x H(mm)	440 x 408 x 380
				Design	As per Buyer's
				Description of Origin	No
		Drop Test			Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	62
		Container Stuffing			866 Sets/40' container
G-17	Cabinet Material			Cabinet Front	PS 94HB
				Cabinet Rear	PS 94HB

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

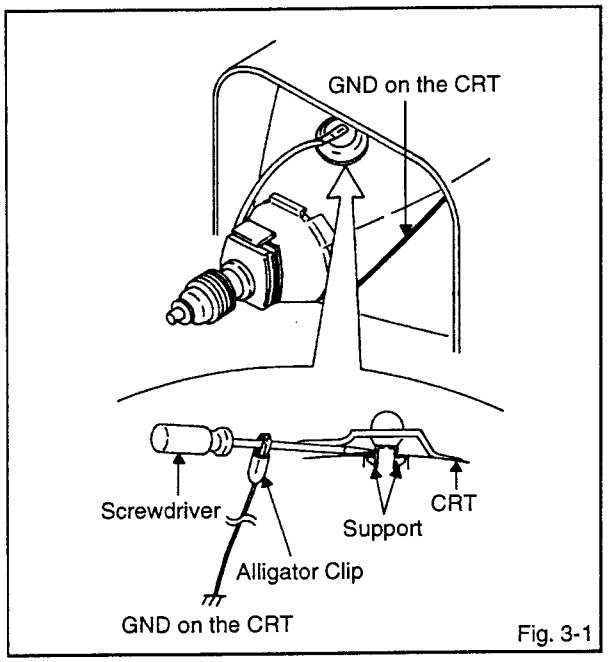


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

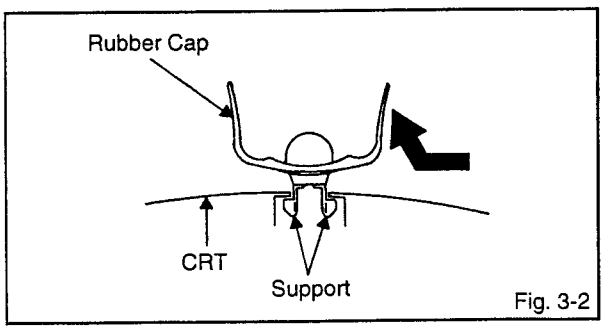


Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

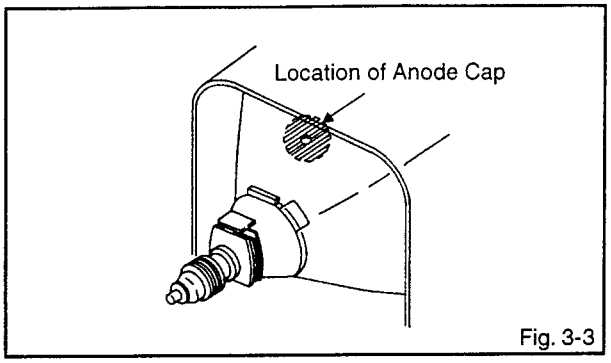


Fig. 3-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**

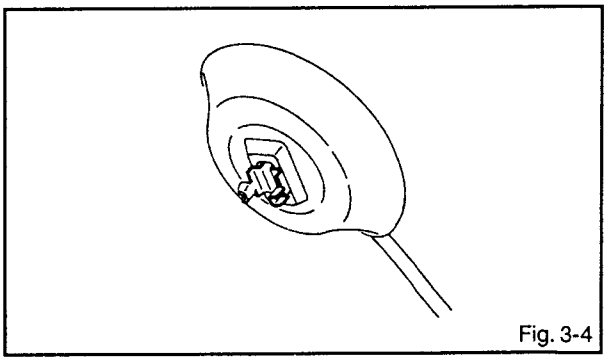


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5.**

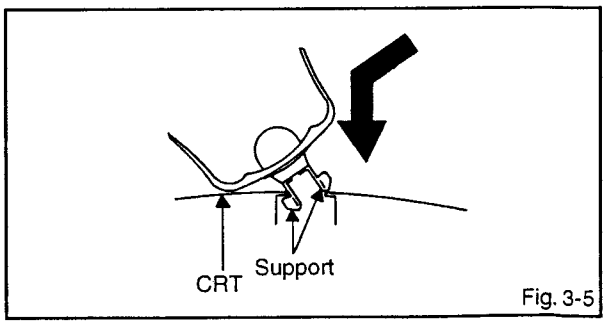


Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 2 seconds.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Reset the user setting items (PICTURE, VOLUME, LANGUAGE and NICAM AUTO/ OFF) to the initial state for delivery.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control.
3. After the confirmation of using hours, turn off the power.

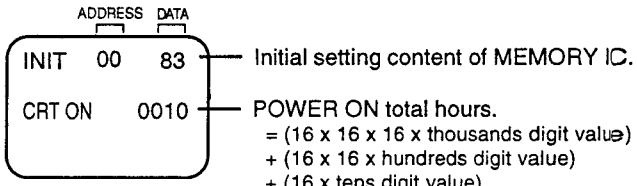

ADDRESS
DATA
INIT 00 83
CRT ON 0010
Initial setting content of MEMORY IC.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	--	00	00	00	00	59	94	41	01	41	14	8D	0B	07	0C	FF
10	00	00	08	2D	03	00	00	7E	46	10	34	08	00	44	A3	21
20	C7	2A	9F	20	D6	2E	95	08	0A	06	00	20	00	E2	18	18
30	00	50	50	50	00	00	00	03	2D	2D	2D	2D	2D	2D	2D	2D
40	7F	75	6B	66	63	60	5D	5A	57	54	51	4E	4B	48	45	42
50	3F	3D	3B	39	37	35	33	31	2F	2D	2B	29	27	25	23	21
60	1F	1E	1D	1C	1B	1A	19	18	17	16	15	14	13	12	11	10
70	0F	0E	0D	0C	0B	0A	09	08	07	06	05	04	03	03	02	02

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control. ADDRESS and DATA should appear as FIG. 1.
3. ADDRESS is now selected and should "blink". Using the SET + or - keys on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using SET + or - until required DATA value has been selected.
6. Press ENTER will take you back to ADDRESS for further selected if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

S-24C04BDP-LA — IC 199

PIC-47143SY — IC 101

R3111N311A/C-TR IC 102_1

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuit or replacing parts or PCB assemblies.

CAUTION

* Use an isolation transformer when performing any service on this chassis.
* Before removing the anode cap, discharge electricity because it contains high voltage.
* When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in this original position.
  Inferior silicon grease can damage IC's and transistors.
* When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contract section of the heat sink, Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Osicilloscope
2. Digital Voltmeter
3. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as show in **FIG. 1-1.**

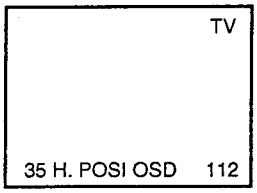


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options show in **Fig. 1-2.**
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	CUT OFF	20	TINT
01	RF AGC	21	SHARP
02	AGC GAIN	22	CONT CENT
03	R DRIVE	23	CONT MAX
04	R CUT OFF	24	CONT MIN
05	G DRIVE	25	COLOR CENT
06	G CUT OFF	26	COLOR MAX
07	B DRIVE	27	COLOR MIN
08	H POSI 50	28	M R CUT OFF
09	V POSI 50	29	M G CUT OFF
10	V POSI 60	30	M B CUT OFF
11	V SIZE 50	31	CVBS OUT
12	V SIZE 60	32	APR THR
13	VCO COASE	33	BELL
14	VCO FINE	34	BANDPASS
15	-	35	H POSI OSD
16	-	36	V POSI OSD
17	BRIGNT CENT	37	H POSI TXT
18	BRIGHT MAX	38	V POSI TXT
19	BRIGHT MIN	39	H POSI 60

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: AGC VOLTAGE

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the UHF (63dB).
3. Connect the digital voltmeter between the **pin 5** and **pin 1 (GND) of CP101.**
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "RF AGC".
5. Press the VOL. UP/DOWN button on the remote control until the voltmeter is 1.85 ± 0.05V.

2-2: CUT OFF

1. Place the set with Aging Test for more than 15 minutes.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "CUT OFF".
3. Adjust the **Screen Volume** until a dim raster is obtained.

2-3: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the white 100% signal from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "R CUT OFF".
5. Using the VOL. UP/DOWN button on the remote control, adjustment the R CUT OFF.
6. Press the CH. UP/DOWN button on the remote control to select the "R DRIVE", "G DRIVE", "G CUT OFF" or "B DRIVE".
7. Using the VOL. UP/DOWN button on the remote control, adjustment the R DRIVE, G DRIVE, G CUT OFF or B DRIVE.
8. Perform the above adjustments 6 and 7 until the white color is looked like a white.

2-4: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-5: CONSTANT VOLTAGE

1. Place the set with Aging Test for more than 15 minutes.
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the digital voltmeter to **TP501.**
4. Set condition is AV MODE without signal.
5. Adjust the **VR501** until the digital voltmeter is 130 ± 1V.

ELECTRICAL ADJUSTMENTS

2-6: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "H POSI(50)".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.
5. Receive the monoscope pattern of NTSC.
6. Using the remote control, set the brightness and contrast to normal position.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(39)** on the remote control to select "H POSI(60)".
8. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-7: VERTICAL LINEARITY

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR420** until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-8: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(11)** on the remote control to select "V SIZE(50)".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 8 ± 3%.
5. Receive the monoscope pattern of NTSC.
6. Using the remote control, set the brightness and contrast to normal position.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "V SIZE(60)".
8. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 8 ± 3%.

2-9: HORIZANTAL POSITION OSD

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of **Fig. 1-1**.
   Press the VOL. UP/DOWN button on the remote control
3. until then difference of A and B becomes minimum.
   (Refer to Fig. 2-1)

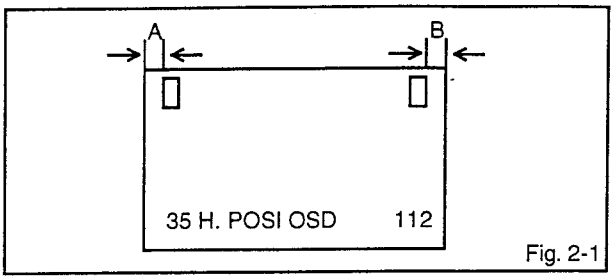


Fig. 2-1

2-10: BRIGHT CENT

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the monoscope Pattern. (RF Input)
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRIGHT CENT".
5. Press the VOL. UP/DOWN button on the remote control until the white 25% is starting to be visible.
6. Receive the monoscope Pattern. (Audio Video Input)
7. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 3~5.

2-11: CONT CENT

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "CONT CENT".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "40".
3. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 1, 2.

2-12: COLOR CENT

1. Receive the monoscope Pattern. (RF Input)
2. Connect the oscilloscope to **TP022**.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(25)** on the remote control to select "COLOR CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 5 scales on the screen of the oscilloscope.
6. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 85 ± 10% for the white level. **(Refer to Fig. 2-2)**
7. Receive the monoscope Pattern. (Audio Video Input)
8. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.

ELECTRICAL ADJUSTMENTS

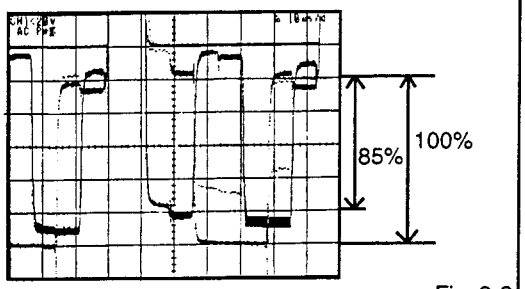


Fig. 2-2

2-13: VCO COASE/VCO FINE

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the oscillator (38.9MHz) to **TP001**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "VCO COASE".
4. Press the VOL. UP/DOWN button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "-" side on the changed from "+" to "-".
5. Press the CH UP button once to set to "VCO FINE" mode.
6. Press the VOL. UP/DOWN button on the remote control to select the 4 step down point from the upper limit on the "OK".
   (Example: In sace of the "OK" point 30~41, select 37.)

2-14: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "V POSI(50)".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.
5. Receive the monoscope pattern of NTSC.
6. Using the remote control, set the brightness and contrast to normal position.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(10)** on the remote control to select "V POSI(60)".
8. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-15: Confirmation of Fixed Value (step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF	AV
02	AGC GAIN	00	00
08	BRIGHT MAX	30	30
19	BRIGHT MIN	00	00
20	TINT	32	32
21	SHARP	10	10
23	CONT MAX	50	50
24	CONT MIN	01	01
26	COLOR MAX	45	45
27	COLOR MIN	14	14
31	CVBS OUT	08	08
32	APR THR	04	04
33	BELL	10	10
34	BANDPASS	06	06
36	V POSI OSD	50	50
37	H POSI TXT	115	115
38	V POSI TXT	60	60

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. (Refer to Fig. 3-1)
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

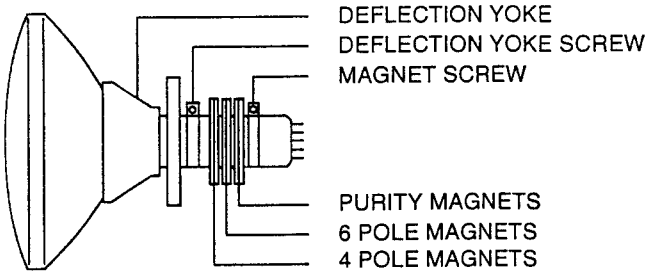


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

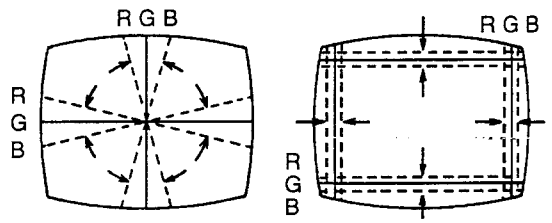
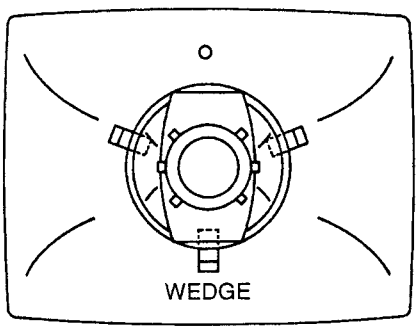


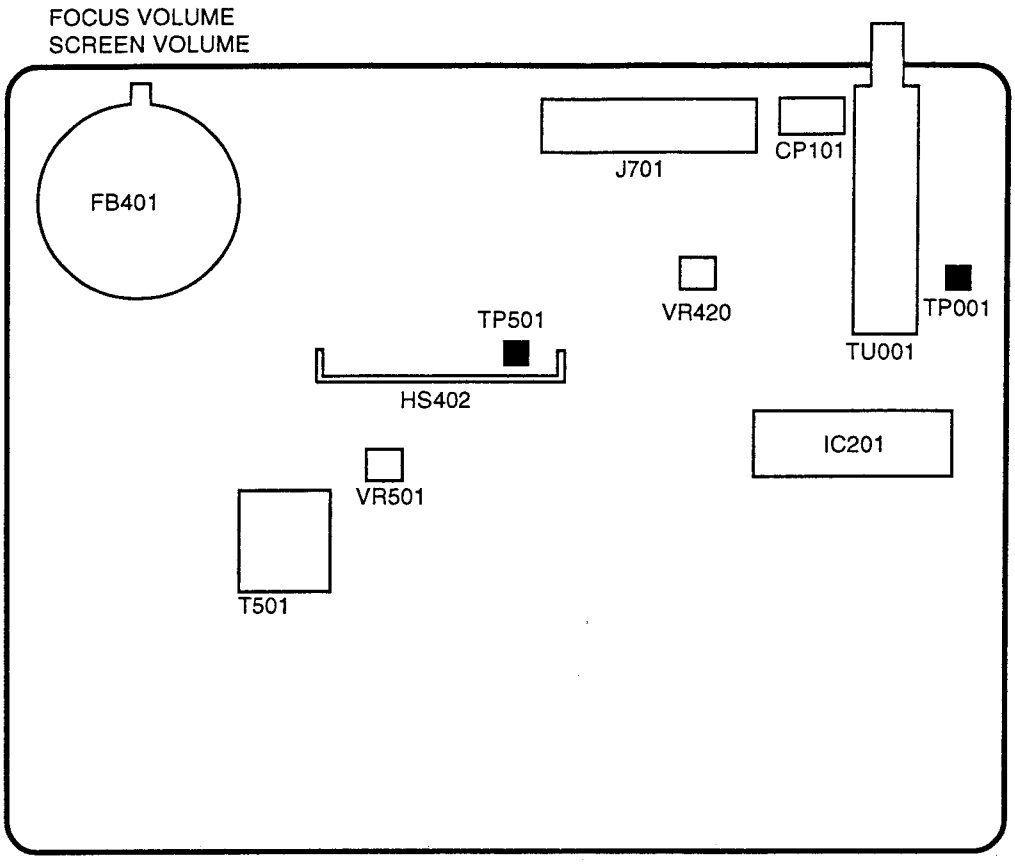
Fig. 3-2-a



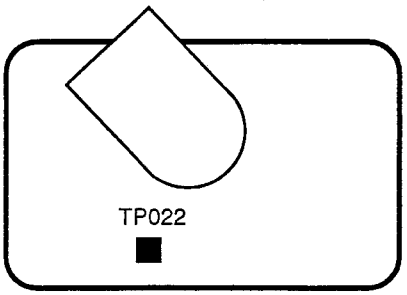
WEDGE POSITION

Fig. 3-2-b

MAJOR COMPONENTS LOCATION GUIDE

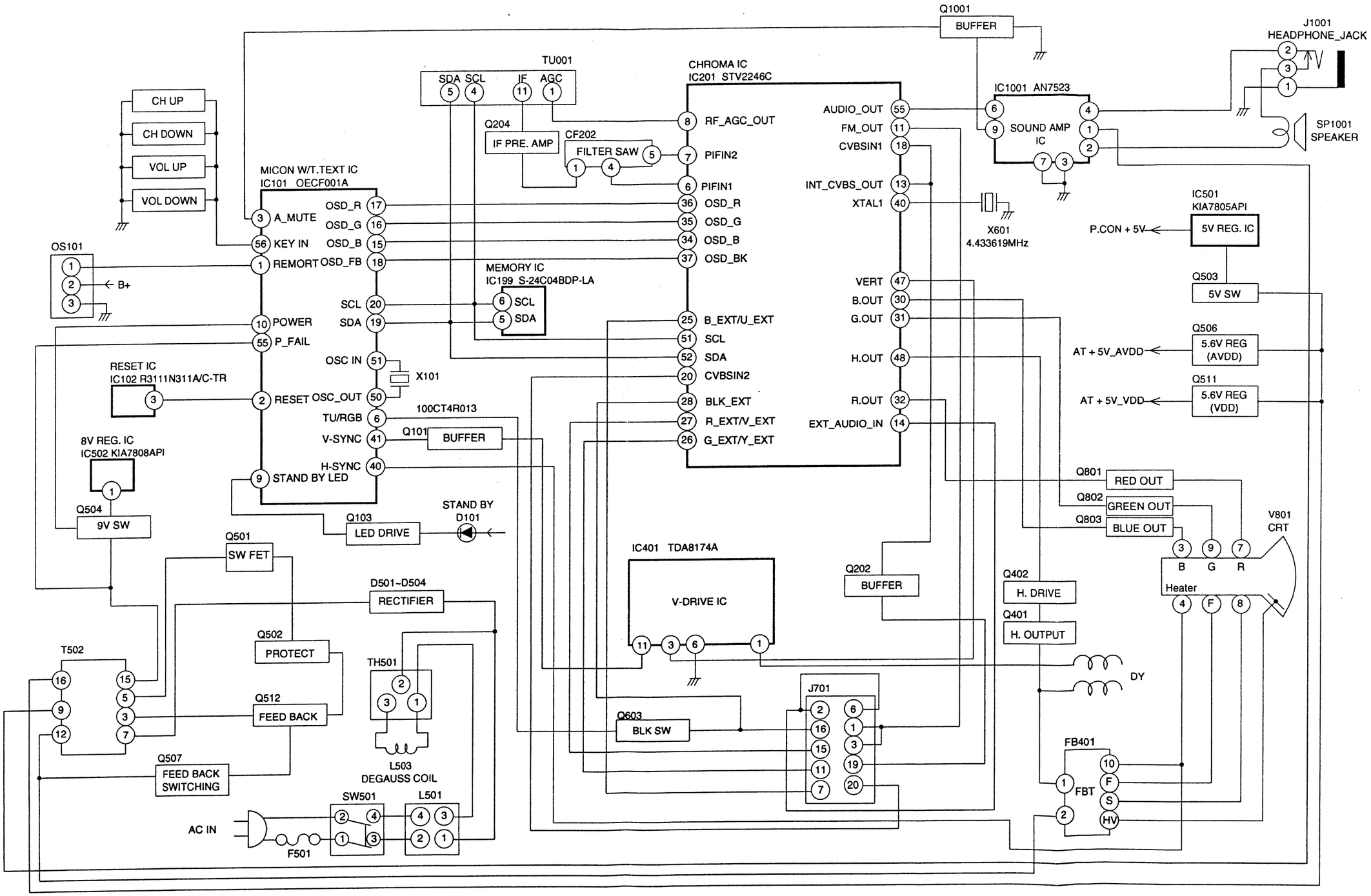


MAIN PCB

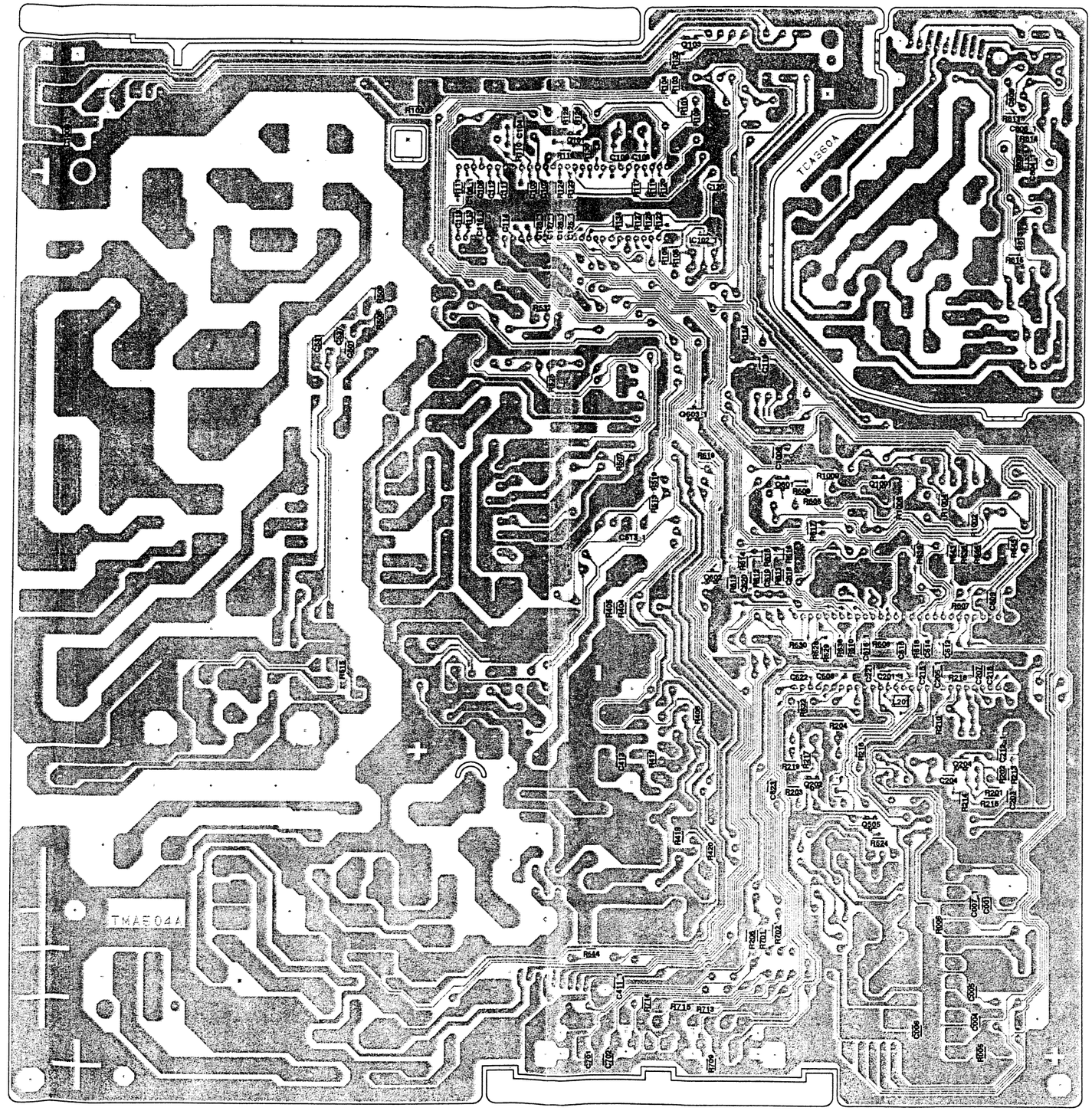


CRT PCB

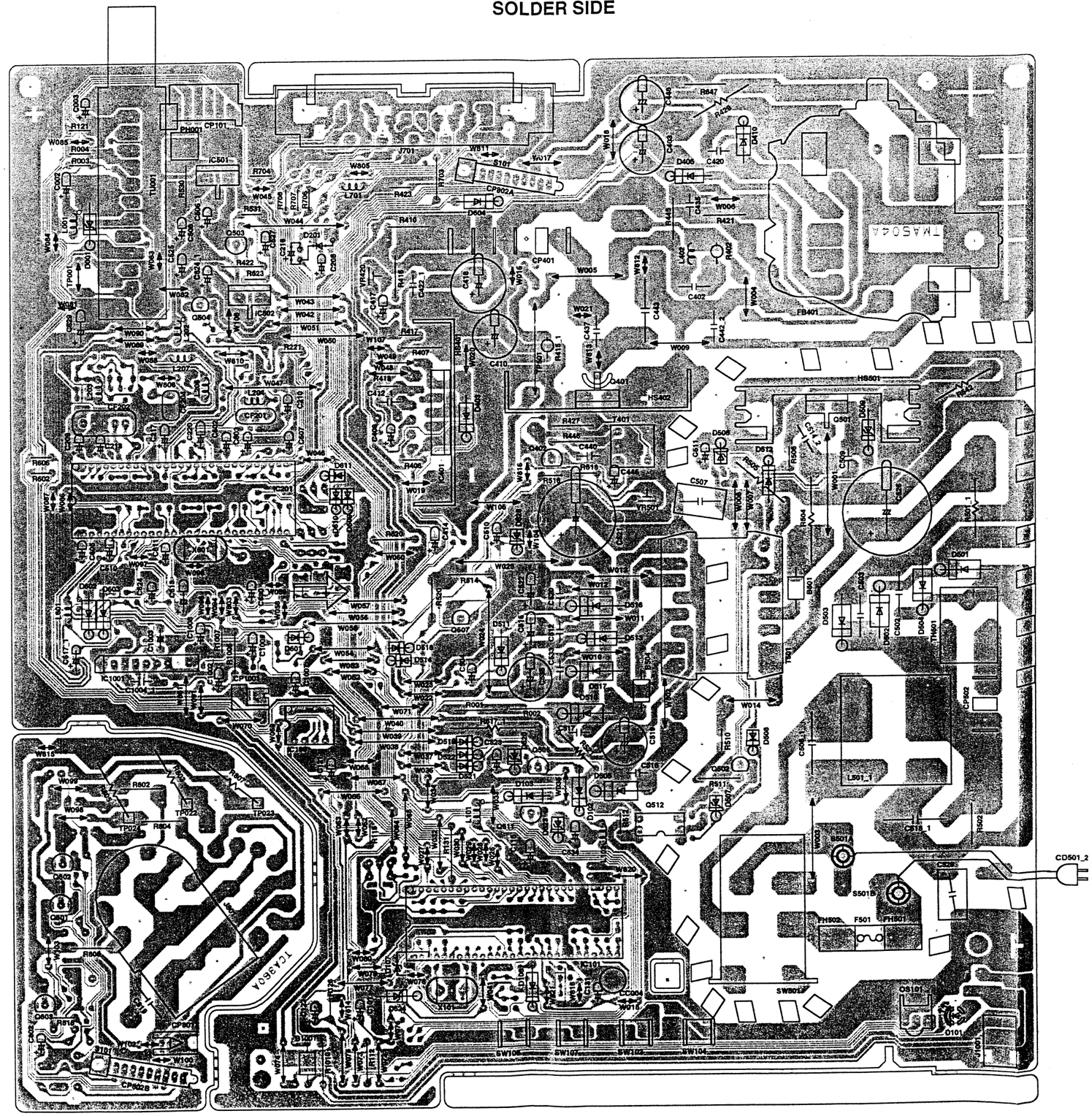
BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
MAIN/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
MAIN/CRT (INSERTED PARTS)
SOLDER SIDE



MICON/T.TEXT/TUNER SCHEMATIC DIAGRAM
(MAIN PCB)

ACCESSORY
BT001 R03(AB)E_20_T
BT002 R03(AB)E_20_T
TM101 R25-1676

TU001 TUWOF4EG-771F2
VCO TP001
PH001 003P-2100

OS101 PIC-47143SY
RESET IC IC102_1 R3111N311AC

MICON W/T.TEXT IC IC101 OECF001A

PCH 195 C30

PCM 195C 30

BUFFER Q101 2SC2412K

MEMORY IC IC199 S-24C04BDP-LA

TEST POINT CP101 06JO-ST

GND	1
I2C SCL	2
I2C SDA	3
I2C OFF	4
RF AGC	5
VIDEO OUT	6

TO SOUND AMP: A_MUTE
FROM/TO POWER: P.FAIL, POWER
FROM DEFLECTION: VD
FROM CHROMA: TU/RGB, SPOT_OFF, HD, FOR_VCR, CVBS_TXT
FROM/TO CHROMA: IF, RF_AGC, SCL, SDA, VIDEO_OUT
FROM POWER: GND, P.CON+5V, +B_130V, AT+5.6V_VDD, AT+5.6V_AVDD
TO CHROMA: POWER, OSD_FB, OSD_R, OSD_G, OSD_B

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

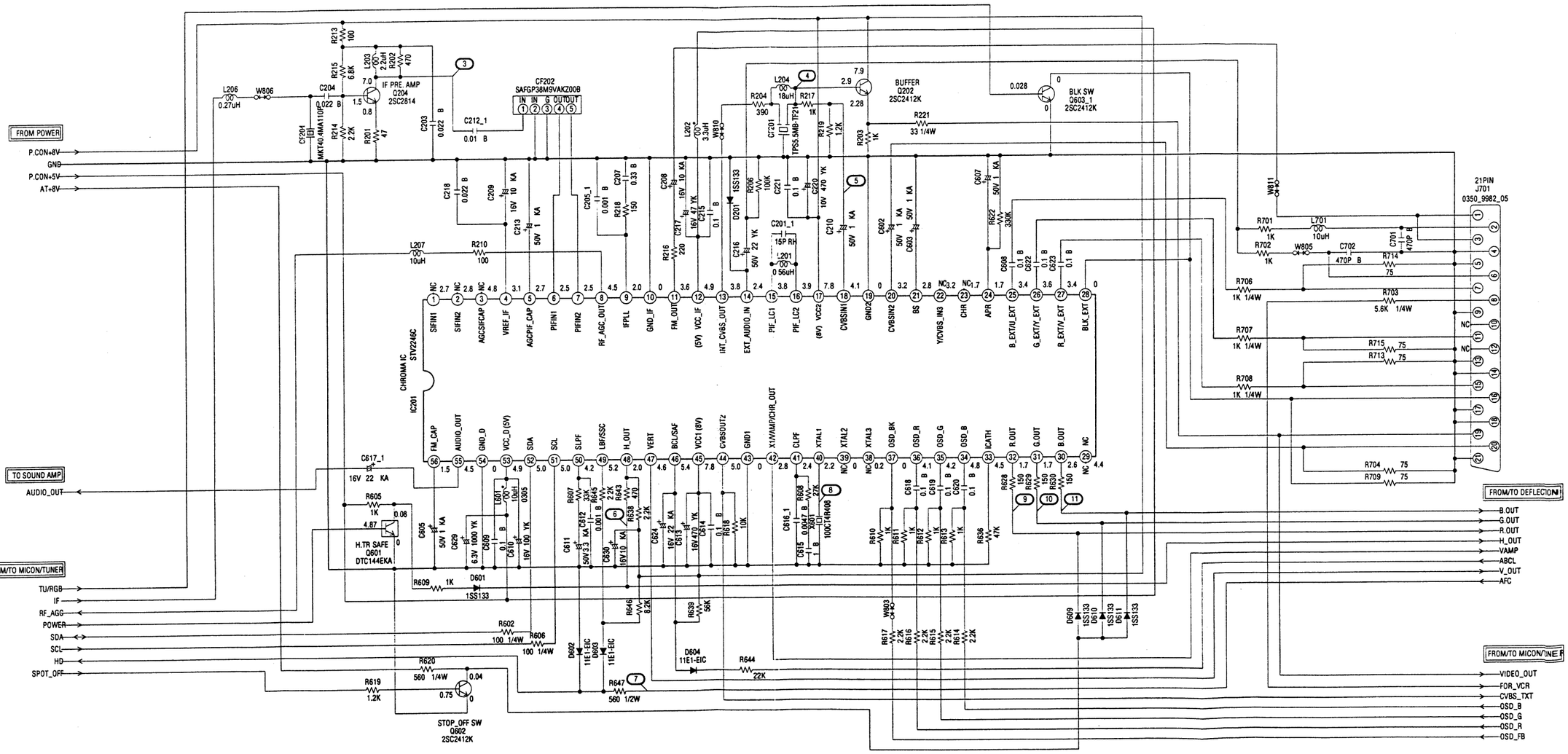
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCB010
TMA504

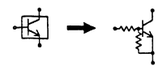
CHROMA/SIF/VIF SCHEMATIC DIAGRAM
(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

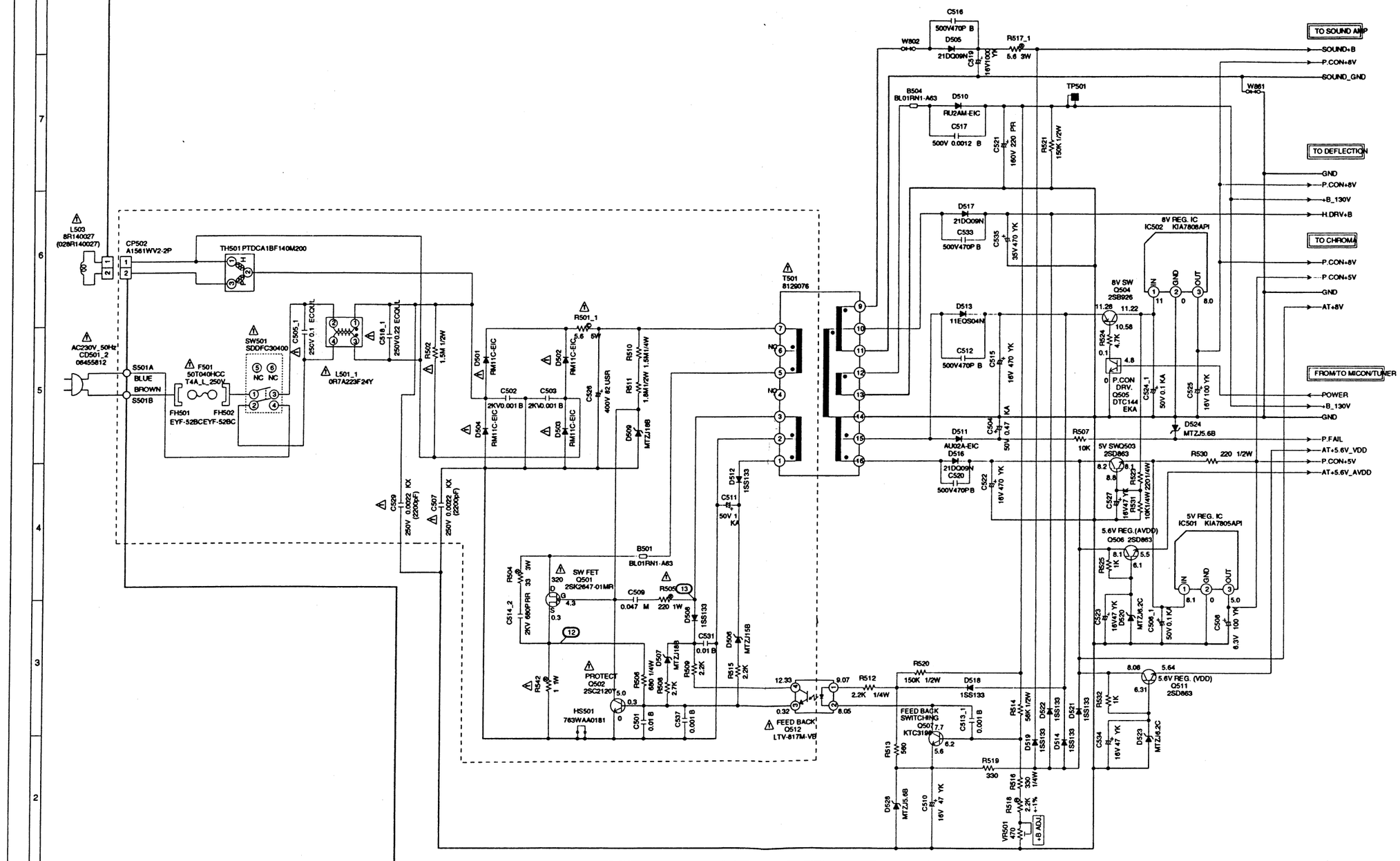
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

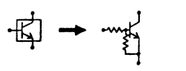


PCB010
TMA504

POWER SCHEMATIC DIAGRAM
(MAIN PCB)



CAUTION: DIGITAL TRANSISTOR



ATTENTION: LES PIECES REPAREES PAR ⚠ NE TANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES RIECES

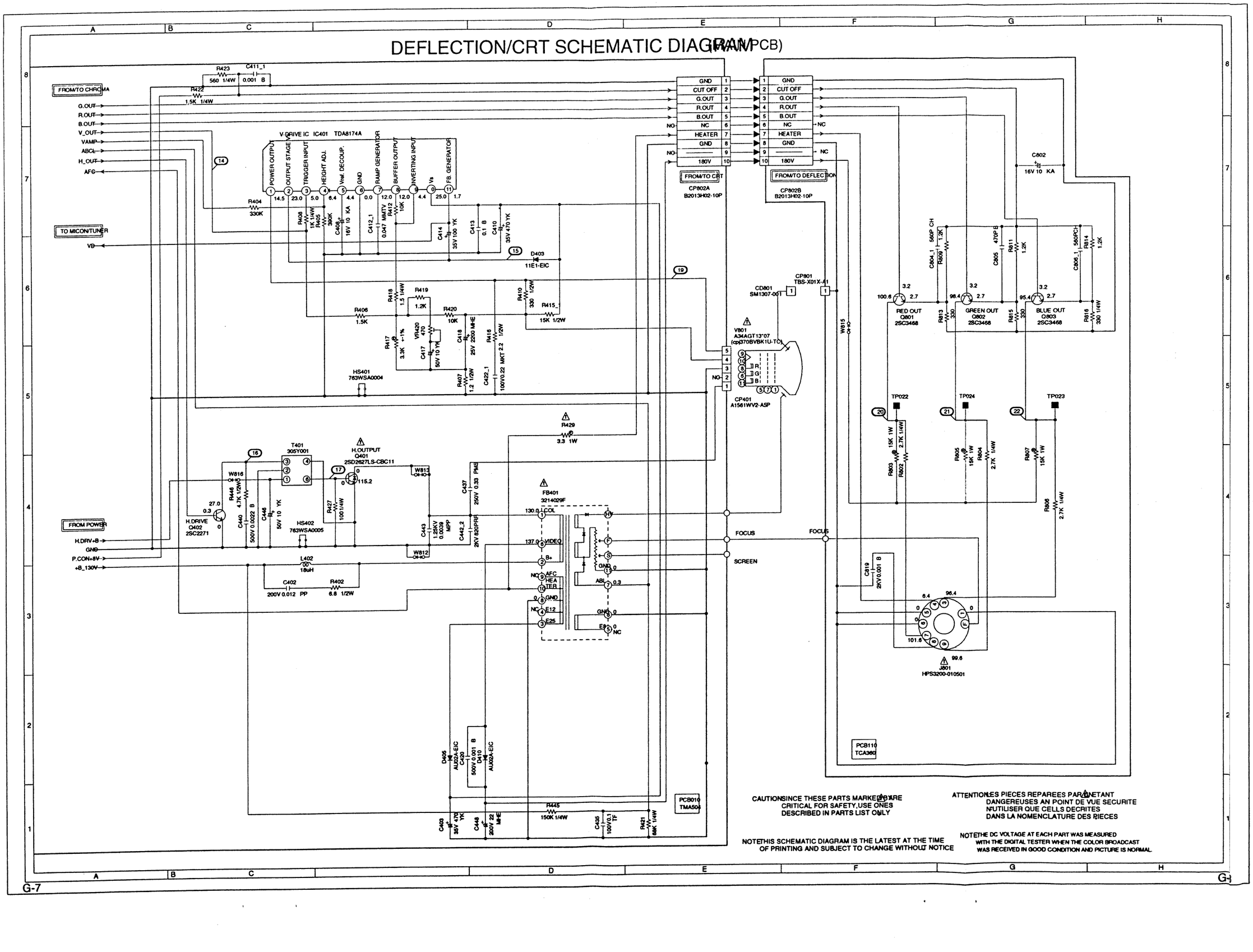
CAUTION: SINCE THESE PARTS MARKED ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

PCB01C
TMA504

DEFLECTION/CRT SCHEMATIC DIAGRAM (MAIN PCB)



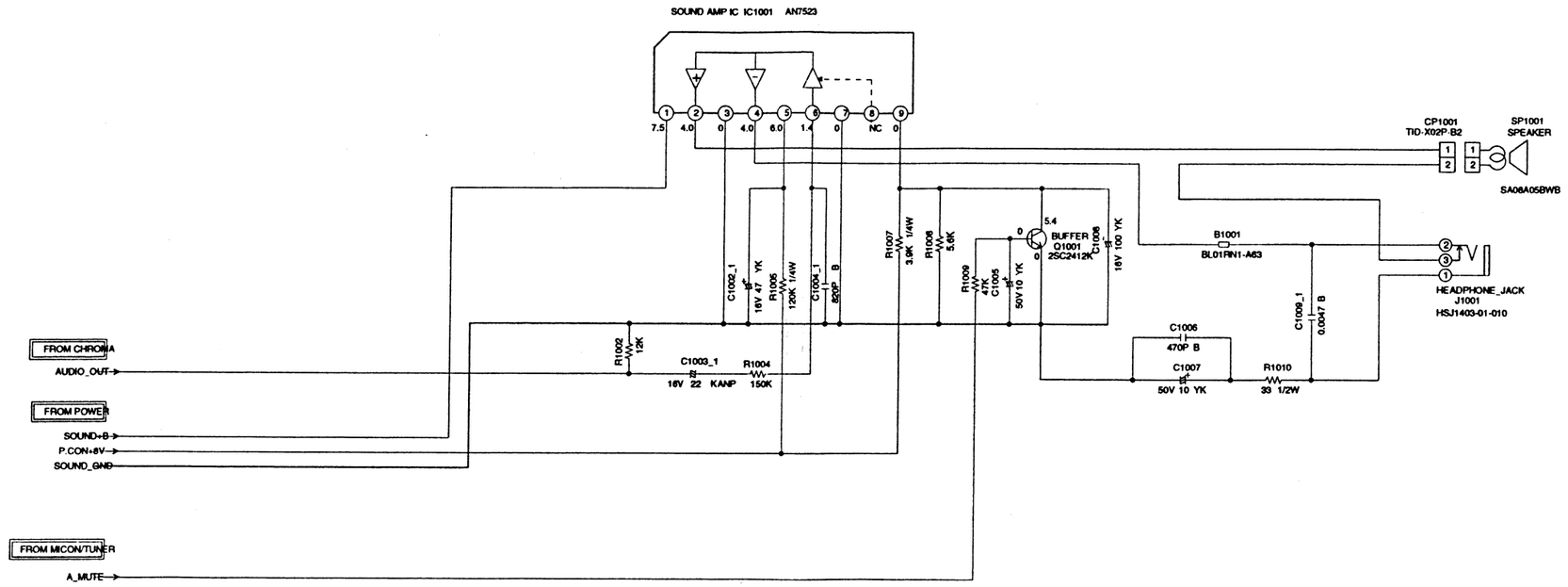
CAUTION SINCE THESE PARTS MARKED ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION LES PIECES REPAREES PAR ⚠ NE TANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

NOTE THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

SOUND AMP SCHEMATIC DIAGRAM
(MAIN PCB)



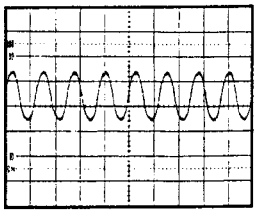
PCB010
TMA504

NOTE THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

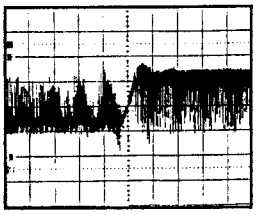
NOTE THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

WAVEFORMS

MICON/T.TEXT/TUNER

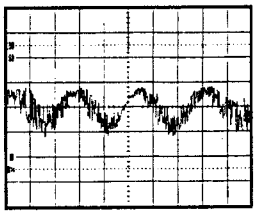


① 5V. 200ns/div

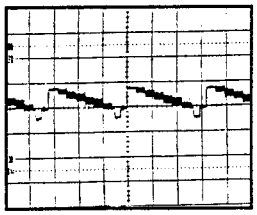


② 5V. 200ns/div

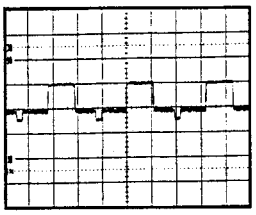
CHROMA/SIF/VIF



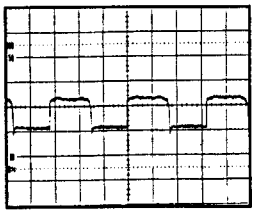
③ 10V 10ns/div



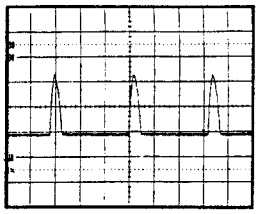
④ 10V. 20µs/div



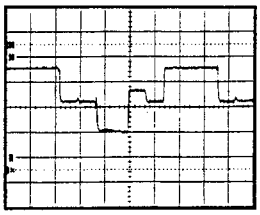
⑤ 5V. 20µs/div



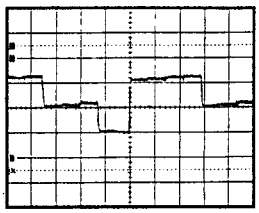
⑥ 5V. 20µs/div



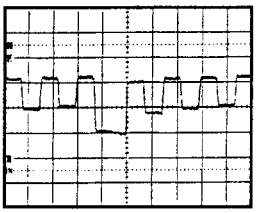
⑦ 100V 20µs/div



⑨ 10V 10µs/div

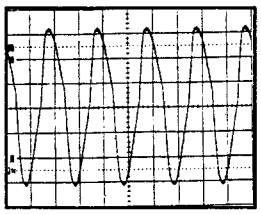


⑩ 10V 10µs/div

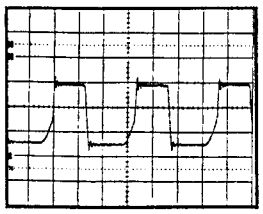


⑪ 10V 10µs/div

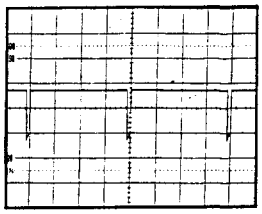
POWER



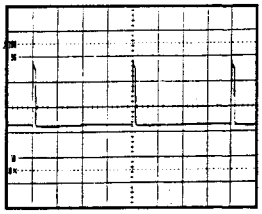
⑫ 500V 10ms/div



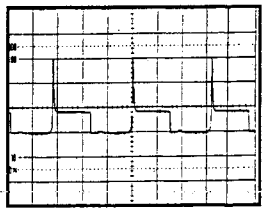
⑬ 100V 5µs/div



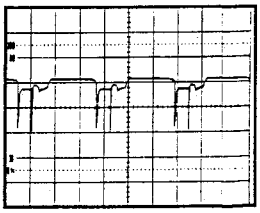
⑭ 20V 5ms/div



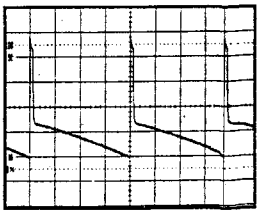
⑮ 100V 5ms/div



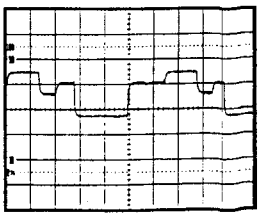
⑯ 500V 20µs/div



⑰ 50V 20µs/div



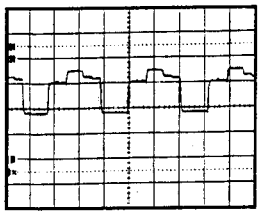
⑲ 100V 5ms/div



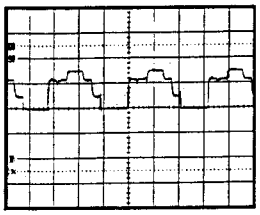
⑳ 500V 10µs/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS



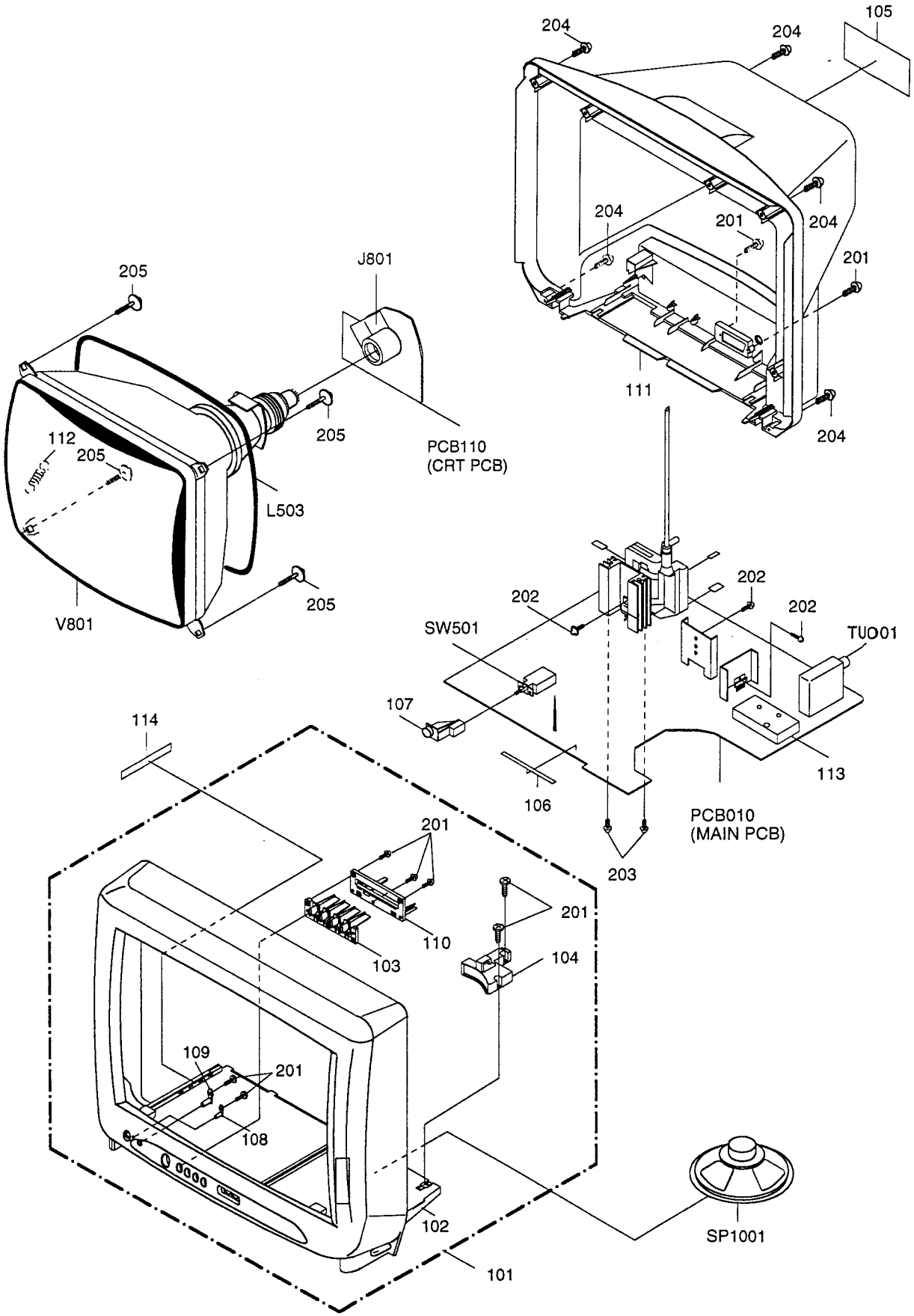
(21) 500V 20μs/div



(22) 50V 20μs/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
101	A3K312M720	CABINET,FRONT ASSY
102	701WPJB534	CABINET,FRONT
103	735WPBA349	BUTTON,FRAME
104	761WPA0163	HOLDER,PCB
105	722202A572	SHEET,RATING
106	800WQ00044	FELT SHEET
107	735WPBA351	BUTTON,POWER
108	713WPAA055	GLASS,LED
109	713WPAA054	GUIDE,REMOCON
110	735WPAA416	BUTTON,HOLDER
111	702UPA0118	CABINET,BACK
112	741WUA0020	SPRING,EARTH
113	752WSA0216	SHIELD,CASE
114	7220001017	SHEET,PTB
201	8110630A04	SCREW,TAP TITE(P) BRAZIER 3x10
202	8109I30804	SCREW,TAP TITE(B) WH7 3x8
203	8109630802	SCREW,TAP TITE(B) BRAZIER 3x8
204	8117540A64	SCREW,TAPPING(B0) TRUSS 4x16
205	8121F50B84	SCREW,TAPPING(BO) FAI20 FLAT 5x28
---	793UCDA888	GIFT BOX
---	A3K302N975	INSTRUCTION BOOK KIT
---	JB5X0100	POLYBAG
---	J3K30201	INSTRUCTION BOOK
---	791MHA0001	LAMIFILM BAG
---	792UHA0114	PACKAGE,TOP
---	792UHA0115	PACKAGE,BOTTOM

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
R429	R655813R3J	R,FUSE	3.3 OHM 1W
⚠ R501	R5Y2CD5R6J	R,CEMENT	5.6 OHM 5W
⚠ R502	R002T2155J	RC	1.5M OHM 1/2W
R504	R3X28B330J	R,METAL OXIDE	33 OHM 3W
⚠ R505	R3X181221J	R,METAL OXIDE	220 OHM 1W
R517	R3X28B5R6J	R,METAL OXIDE	5.6 OHM 3W
R521	R00202154J	RC	150K OHM 1/2W
⚠ R542	R3X181010J	R,METAL OXIDE	1 OHM 1W
R803	R3X181153J	R,METAL OXIDE	15K OHM 1W
R805	R3X181153J	R,METAL OXIDE	15K OHM 1W
R807	R3X181153J	R,METAL OXIDE	15K OHM 1W
		CAPACITORS	
C216	E02L05220M	CE	22 UF 50V or
	E02LU5220M	CE	22 UF 50V
C402	P3N1F2123J	CPP	0.012 UF 200V
C418	E5EZF3222M	CE	2200 UF 25V
C437	P4J7F3334J	CMPP	0.33 UF 250V PMS
C442	C0PLRR7W2K	CC	820 PF 2KV RR or
	C03L0R7W2K	CC	820 PF 2KV R
C443	P4N8FJ392H	CMPP	0.0039UF 1.25KV
C448	E5EZFC220M	CE	22 UF 200V
C502	C0JBB0713K	CC	0.001 UF 2KV B
C503	C0JBB0713K	CC	0.001 UF 2KV B
⚠ C505	P2122B104M	CMP	0.1 UF 250V ECQUL
⚠ C507	CB3C30MH3M	CC	0.0022UF 250V
C514	C0PLRR7U2K	CC	680 PF 2KV RR or
	C03L0R7U2K	CC	680 PF 2KV R
⚠ C518	P2122B224M	CMP	0.22 UF 250V ECQUL
C521	E53VFB221M	CE	220 UF 160V
C526	E52D0H820M	CE	82 UF 400V
⚠ C529	CB3C30MH3M	CC	0.0022UF 250V
C819	C0JBB0713K	CC	0.001 UF 2KV B
		DIODES	
D001	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D101	0021721150	LED	SLR-342VCT32
D102	D2WT011E10	DIODE SILICON	11E1-EIC
D105	D2WT011E10	DIODE SILICON	11E1-EIC
D107	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D108	D1VT001330	DIODE,SILICON	1SS133T-77
D201	D1VT001330	DIODE,SILICON	1SS133T-77
D403	D2WT011E10	DIODE SILICON	11E1-EIC
D405	D2WTAU02A0	DIODE SILICON	AU02A-EIC
D410	D2WTAU02A0	DIODE SILICON	AU02A-EIC
⚠ D501	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D502	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D503	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D504	D2WTRM11C0	DIODE SILICON	RM11C-EIC
D505	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D506	D97U01501B	DIODE,ZENER	MTZJ15B T-77
D507	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D508	D1VT001330	DIODE,SILICON	1SS133T-77
D509	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D510	D2WXRU2AM0	DIODE SILICON	RU2AM-EIC
D511	D2WTAU02A0	DIODE SILICON	AU02A-EIC
D512	D1VT001330	DIODE,SILICON	1SS133T-77
D513	D28TQS04N0	DIODE SCHOTTKY	11EQS04N-TA1B2
D514	D1VT001330	DIODE,SILICON	1SS133T-77
D516	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D517	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D518	D1VT001330	DIODE,SILICON	1SS133T-77
D519	D1VT001330	DIODE,SILICON	1SS133T-77
D520	D97U06R21C	DIODE,ZENER	MTZJ6.2C T-77
D521	D1VT001330	DIODE,SILICON	1SS133T-77
D522	D1VT001330	DIODE,SILICON	1SS133T-77
D523	D97U06R21C	DIODE,ZENER	MTZJ6.2C T-77
D524	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D528	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D601	D1VT001330	DIODE,SILICON	1SS133T-77
D602	D2WT011E10	DIODE SILICON	11E1-EIC
D603	D2WT011E10	DIODE SILICON	11E1-EIC
D604	D2WT011E10	DIODE SILICON	11E1-EIC
D609	D1VT001330	DIODE,SILICON	1SS133T-77
D610	D1VT001330	DIODE,SILICON	1SS133T-77
D611	D1VT001330	DIODE,SILICON	1SS133T-77
		ICS	
IC101	I5PD0F001A	IC	OECF001A

REF. NO.	PART NO.	DESCRIPTION	
		ICS	
IC102	IC7J0311A0	IC	R3111N311A/C-TR
IC199	A3K312N015	IC	S-24C04BDP-LA
IC201	I0WDE246C0	IC	STV2246C
IC401	I0WTD81740	IC	TDA8174A
IC501	I1KA97805A	IC	KIA7805API
IC502	I1KA97808A	IC	KIA7808API
IC1001	I0FSP75230	IC	AN7523
		TRANSISTORS	
Q101	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q103	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q202	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q204	T83A028140	TRANSISTOR,SILICON	2SC2814(F3,F4)-T
⚠ Q401	TD30026270	TRANSISTOR SILICON	2SD2627LS-CBC11
Q402	TC3T022710	TRANSISTOR,SILICON	2SC2271(D,E)-AE
⚠ Q501	T410K26470	FET	2SK2647-01MR
⚠ Q502	TC5T021204	TRANSISTOR,SILICON	2SC2120Y(TPE2)
Q503	TD3T008630	TRANSISTOR,SILICON	2SD863(E,F)-AE
Q504	TBWT009260	TRANSISTOR,SILICON	2SB926(S,T)-AA
Q505	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146
Q506	TD3T008630	TRANSISTOR,SILICON	2SD863(E,F)-AE
Q507	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q511	TD3T008630	TRANSISTOR,SILICON	2SD863(E,F)-AE
⚠ Q512	0002E00610	PHOTO COUPLER	LTV-817M-VB
Q601	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146
Q602	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q603	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q801	TC3T034680	TRANSISTOR,SILICON	2SC3468(D,E)-AE
Q802	TC3T034680	TRANSISTOR,SILICON	2SC3468(D,E)-AE
Q803	TC3T034680	TRANSISTOR,SILICON	2SC3468(D,E)-AE
Q1001	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
		COILS &TRANSFORMERS	
L001	02167F100J	COIL	10 UH
L101	02167F100J	COIL	10 UH
L102	02167F100J	COIL	10 UH
L201	0216S1R56J	COIL	0.56 UH
L202	0216733R3K	COIL	3.3 UH
L203	021LA62R2M	COIL	2.2 UH
L204	021LA6180K	COIL	18 UH
L206	021LA6R27M	COIL	0.27 UH
L207	021LA6100J	COIL	10 UH
L402	021U6D180K	COIL	18 UH
⚠ L501	029T000094	COIL,LINE FILTER	0R7A223F24Y
⚠ L503	028R140027	COIL,DEGAUSS	8R140027
L601	02167F100J	COIL	10 UH
L701	021LA6100K	COIL	10 UH
T401	03305Y0018	TRANS,HORIZONTAL DRIVE	305Y001
⚠ T501	0481290766	TRANSFORMER,SWITCHING	8129076
		JACKS	
J701	063G100042	SOCKET,21PIN	0350_9982_05
⚠ J801	066X120014	SOCKET,CATHODE RAY TUBE	HPS32000 10501
J1001	0602121012	JACK,RCA 3.5	HSJ1403-01-010
		SWITCHES	
SW102	0504101T34	SWITCH,TACT	EVQ21505R
SW104	0504101T34	SWITCH,TACT	EVQ21505R
SW106	0504101T34	SWITCH,TACT	EVQ21505R
SW107	0504101T34	SWITCH,TACT	EVQ21505R
⚠ SW501	0530205002	SWITCH PLUS	SDDFC304-00
		VARIABLE RESISTORS	
VR420	V1163Q2BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ2
VR501	V1163Q2BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ2
		P.C.BOARD ASSEMBLIES	
PCB010	A3K312M010K	PCB ASS'Y	TMA504A
PCB110	A3K302M110K	PCB ASS'Y	TCA360A
		MISCELLANEOUS	
B501	024AT03655	CORE BEADS	BL01RN1A63T6
B504	024AT03655	CORE BEADS	BL01RN1A63T6
B1001	024AT03655	CORE BEADS	BL01RN1A63T6
BT001	1412004008	BATTERY,MANGAN	R03(AB)E_20_T
BT002	1412004008	BATTERY,MANGAN	R03(AB)E_20_T
⚠ CD501	1206455812	CORD AC BUSH	6455812
CD801	1278140027	BRAIDED WIRE	SM1307-01
CF201	1012T5R503	FILTER,CERAMIC TRAP	TPS5.5MB-TF21
CF202	1022038R9E	FILTER,SAW	SAFGP38M9VAKZ00B or
	1022T38R9E	FILTER,SAW	SAF38.9NAK220Z
CF204	1012T04001	FILTER,CERAMIC TRAP	MKT40.4MA110P-TF
CP101	069X160379	CONNECTOR PCB SIDE	06JQ-ST

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
CP401	069S450089	CONNECTOR PCB SIDE	A1561WV2-A5P
CP502	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP801	069W010030	CONNECTOR PCB SIDE	TBS-X01X-A1
CP1001	069W120019	CONNECTOR PCB SIDE	TID-X02P-B2
CP802A	067U010049	WIRE HOLDER	B2013H02-10P
CP802B	067U010049	WIRE HOLDER	B2013H02-10P
EL002	124120301A	EYE LET	XRY20X30BD
⚠ F501	080NT04003	FUSE	50T040HCC
⚠ FB401	043214029F	TRANSFORMER FLYBACK	3214029F
FH501	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	06710T0006	HOLDER,FUSE	EYF-52BC
OS101	077Q047001	REMOTE RECEIVER	PIC-47143SY
PH001	069W01001A	CONNECTOR PCB SIDE	003P-2100
S101	WHL6032038	FLAT CABLE	AWG26 10C BLACK 320MM
SP1001	070C732003	SPEAKER	SA08A05BWB or
	070W132016	SPEAKER	NS-300RW W/WIRE
TH501	DF20C140M0	DEGAUSS ELEMENT	PTDCA1BF140M200
TM101	076R0DG180	TRANSMITTER	R25-1676
TU001	0145511021	TUNER,VHF-UHF	TUWOF4EG-771F2
⚠ V801	098P140496	CRT W/DY	A34AGT13x07
X101	100CT4R013	CRYSTAL	HC-49/U-S
X601	100CT4R408	CRYSTAL	HC-49/U

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

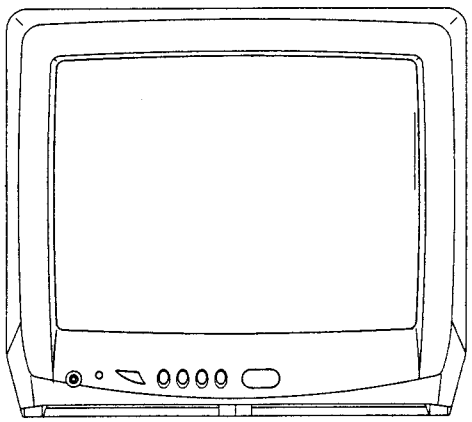
CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

ORION

TV-3787

SERVICE MANUAL

COLOR TELEVISION RECEIVER



SUPPLEMENT
CHASSIS CODE A

This SUPPLEMENT must be used together SERVICE MANUAL for TV-3786SI.
All other test and repair procedures are as shown in the ORIGINAL MANUAL.
Please file this SUPPLEMENT with the ORIGINAL VERSIONS.

Design and specifications are subject to change without notice.

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	TV-3786SI		TV-3787	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
BT001	1412004008	BATTERY,MANGAN R03(AB)E_20_T	1412004013	BATTERY,MANGAN R03(AB)2PXGPI
BT002	1412004008	BATTERY,MANGAN R03(AB)E_20_T	1412004013	BATTERY,MANGAN R03(AB)2PXGPI

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	TV-3786SI		TV-3787	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101	A3K312M720	CABINET,FRONT ASS'Y	A3K313M720	CABINET,FRONT ASS'Y
102	701WPJB534	CABINET,FRONT	701WPJB598	CABINET,FRONT
103	735WPBA349	BUTTON,FRAME	735WPAA429	BUTTON,FRAME
105	722202A572	SHEET,RATING	722202A585	SHEET,RATING
107	735WPBA351	BUTTON,POWER	735WPAA424	BUTTON,POWER
108	713WPAA055	GLASS,LED	713WPAA034	GLASS,LED
109	713WPAA054	GUIDE,REMOCON	713WPAA048	GUIDE,REMOCON
110	735WPAA416	BUTTON,HOLDER	735WPAA427	BUTTON,BASE
112	741WUA0020	SPRING,EARTH	741WUA0019	SPRING,EARTH
---	793UCDA888	GIFT BOX	793UCDA924	GIFT BOX
---	A3K302N975	INSTRUCTION BOOK KIT	A3K313N975	INSTRUCTION BOOK KIT
---	J3K30201	INSTRUCTION BOOK	J3K31301	INSTRUCTION BOOK
---	792UHA0114	PACKAGE,TOP	792UHAA021	PACKAGE,TOP
---	792UHA0115	PACKAGE,BOTTOM	792UHAA022	PACKAGE,BOTTOM

SPEC.NO.	M3K3-13M
O/R NO.	U223501

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	TV-3786SI		TV-3787SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
BT001	1412004008	BATTERY,MANGAN R03(AB)E_20_T	1412004013	BATTERY,MANGAN R03(AB)2PXGPI
BT002	1412004008	BATTERY,MANGAN R03(AB)E_20_T	1412004013	BATTERY,MANGAN R03(AB)2PXGPI

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	TV-3786SI		TV-3787SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101	A3K312M720	CABINET,FRONT ASS'Y	A3K314M720	CABINET,FRONT ASS'Y
102	701WPJB534	CABINET,FRONT	701WPJB599	CABINET,FRONT
103	735WPBA349	BUTTON,FRAME	735WPBA345	BUTTON,FRAME
105	722202A572	SHEET,RATING	722202A586	SHEET,RATING
107	735WPBA351	BUTTON,POWER	735WPBA366	BUTTON,POWER
108	713WPAA055	GLASS,LED	713WPAA034	GLASS,LED
109	713WPAA054	GUIDE,REMOCON	713WPAA048	GUIDE,REMOCON
110	735WPAA416	BUTTON,HOLDER	735WPAA427	BUTTON,BASE
111	702UPA0118	CABINET,BACK	702UPAA026	CABINET,BACK
112	741WUA0020	SPRING,EARTH	741WUA0019	SPRING,EARTH
---	793UCDA888	GIFT BOX	793UCDA925	GIFT BOX
---	A3K302N975	INSTRUCTION BOOK KIT	A3K313N975	INSTRUCTION BOOK KIT
---	J3K30201	INSTRUCTION BOOK	J3K31301	INSTRUCTION BOOK
---	792UHA0114	PACKAGE,TOP	792UHAA021	PACKAGE,TOP
---	792UHA0115	PACKAGE,BOTTOM	792UHAA022	PACKAGE,BOTTOM

SPEC.NO.	M3K3-14M
O/R NO.	U223503